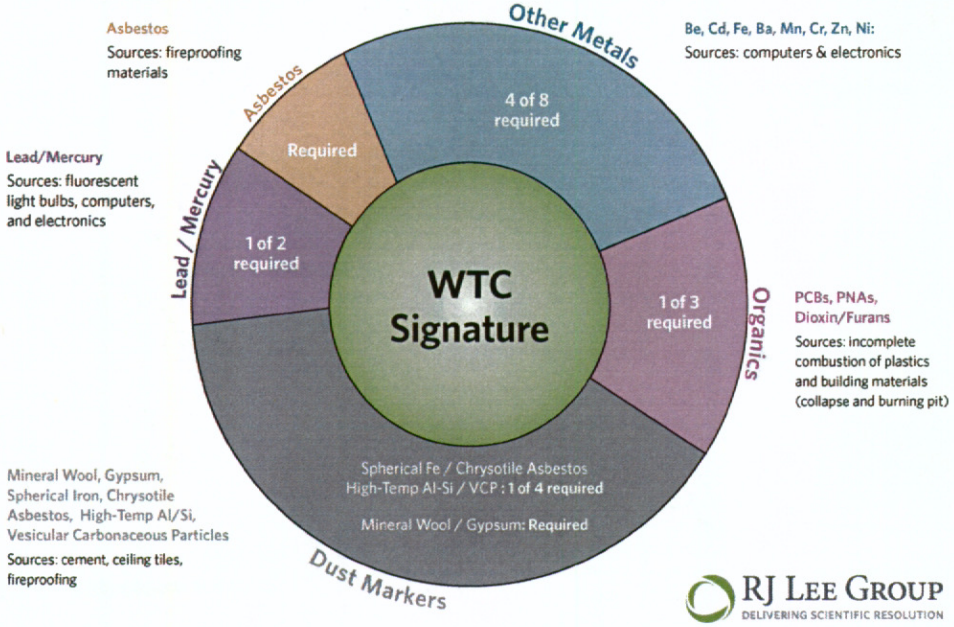
Officer Harris Uniform

WTC Signature Components Required for Positive Identification



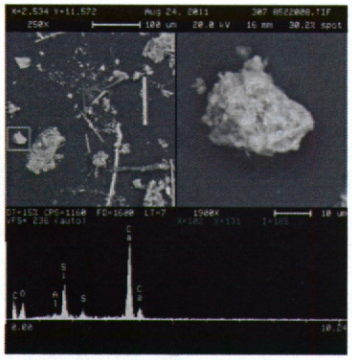
Health Problems Associated with WTC Hazardous Substances Exceeding COPC Committee Health-Based Screening Levels or Benchmarks in the Building

Health Problems	WTC Hazardous Substance
Cancer	Asbestos, cadmium, dioxins, PCBs
Fertility/birth defects	Dioxins, lead mercury, PCBs
Brain and nerve disease	Lead, mercury, manganese
Liver disease	Chromium, copper, dioxin, PCBs
Kidney disease	Cadmium, chromium, copper lead, mercury
Lung and respiratory disorders	Asbestos, barium, cadmium, chromium, copper, mercury, mold and bacteria
Blood and bone disorders	Cadmium, lead, zinc
Heart disease	Barium
Immune system disease	Chromium, dioxins, mercury, nickel

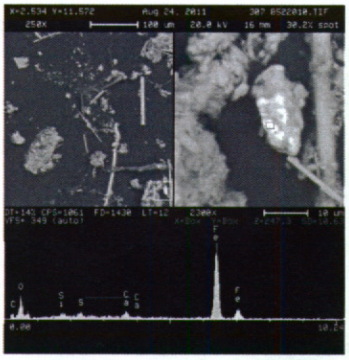
Comparison of Laboratory Results to WTC Dust Classification Criteria

Analysis Type	Results from Pants	Results from Shirt
Dust Characterization by SEM (min. 100 random particles)	Mineral Wool Chrysotile	Gypsum (Ca/S-rich)
Asbestos by TEM	**59,000 Structures/cm2 (Chrysotile)**	**5,900 Structures/cm2 (Chrysotile)**
Mercury/Lead by ICP	Lead: 279 µg/ft2	Lead: 93 µg/ft2
Heavy Metals by ICP	Barium: 432 µg/ft2 **Chromium: 347 µg/ft²** Manganese: 853 µg/ft² Zinc: 2,770 µg/ft2 Copper: 929 µg/ft2 **Cadmium: 14 µg/ft2** Nickel: 277 µg/ft2	Barium: 119 µg/ft2 **Chromium: 3,160 µg/ft2** Manganese: 2,630 µg/ft² Zinc: 1,640 µg/ft2 Copper: 369 µg/ft2 **Cadmium: < 9 µg/ft2** Nickel: 178 µg/ft²
Semi-volatile Organics	**PCBs: 1.2 µg/ft2 (pcb - aroclor 1260)** PNAs: 32 µg/ft² (EPA BAP Equiv. Basis) **Dioxins/Furans: 70 pg/ft2 (WHO TEQ Basis)**	**PCBs: 1.1 µg/ft2 (pcb - aroclor 1260)** PNAs: non-detect (EPA BAP Equiv. Basis) **Dioxins/Furans: 49 pg/ft2 (WHO TEQ Basis)**
Summary	***Positive for WTC Dust***	***Positive for WTC Dust***

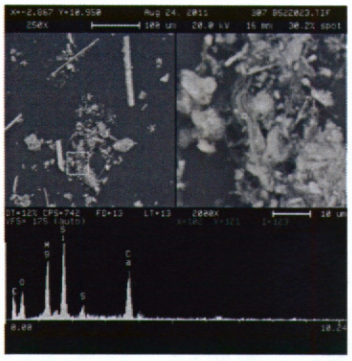
WTC Particulate Found on Officer Harris Uniform



Ca/Si-rich particle (e.g., possible cement) images and EDS spectrum from SEM adhesive stub obtained from uniform pants.



Fe-rich particle images and EDS spectrum from SEM adhesive stub obtained from uniform pants.



Chrysotile bundle with Ca/S-rich matrix images and EDS spectrum from SEM adhesive stub obtained from uniform pants.

High magnification SEM image of chrysotile fibers with matrix material from adhesive stub obtained from uniform pants.

Relative Toxicity (Carcinogenicity) of Total Asbestos Fibers from the WTC Dust as Compared to Other Sources